Governor's Office of Business and Economic Development

California Advanced Manufacturing Summit

> "Our first priority is making America a magnet for new jobs and manufacturing.... Last year, we created our first manufacturing innovation institute in Youngstown, Ohio…. I'm announcing the launch of three more of these manufacturing hubs... And I ask this Congress to help create a network of fifteen of these hubs and guarantee that the next revolution in manufacturing is Made in America."[1]
>
> – President Obama, 2013 State of the Union

About the Summit:

The Governor's Office for Business and Economic Development (GO-Biz) will hold the California Advanced Manufacturing Summit at the State Capitol on March 27th, 2013. The summit will be led by Governor Brown's Senior Advisor on Jobs and Economic Development Mike Rossi and will convene key stakeholders from education, industry, research and the state's iHub innovation network.

The summit is a response to President Obama's state of the union call for an expansion of the National Network for Manufacturing Innovation (NNMI) with the opening of new Institutes for Manufacturing Innovation (IMI). This summit will be a coordination of stakeholders to craft California's proposal to compete for new manufacturing institutes.

"As the number one state for manufacturing jobs and output in the nation, California will lead the next generation of advanced manufacturing in America," said Mike Rossi, senior jobs advisor to Governor Brown. "We heard the President's call and California will respond."

What is Advanced Manufacturing?

Experts define advanced manufacturing as a new way of accomplishing the "how to" of production, where the emphasis is on customization and scalability, while advancing the technologies necessary to improve capabilities. However, there is no single definition of advanced manufacturing and most definitions of the term are broad. Nonetheless, Paul Fowler of the National Council for Advanced Manufacturing (NACFAM) describes the consensus definition of advanced manufacturing as an entity that:

> "Makes extensive use of computer, high precision, and information technologies integrated with a high performance work force in a production system capable of furnishing a heterogeneous mix of products in small or large volumes with both the efficiency of mass production and the flexibility of custom manufacturing in order to respond rapidly to customer demands."[2]

Race for the National Network for Manufacturing Innovation (NNMI):

Numerous stakeholders in California are posturing to receive funds from the Obama administration's anticipated NNMI in 2013.[3] The Obama administration proposed a $1 billion investment through the NNMI in a series of competitive bids to create 15 Institutes for Manufacturing Innovation (IMIs), which are similar to the California iHub program.[4] These IMIs will be *industry-led*, as federal and state funding are designed to phase-out over time.[5] Crucially, this role should be catalytic, not directive; government actions should spur other key players, especially the private sector, into action and foster stronger collaboration among them.[6]

To jump-start the NNMI, the President announced that his administration awarded $30 million in federal funding for the National Additive Manufacturing Innovation Institute (NAMII) in 2012.[7] The NAMII is a consortium for three-dimensional printing comprised of 40 companies, 9 research universities, 5 community colleges, and 11 nonprofits from the Ohio-Pennsylvania-West Virginia "Tech Belt."[8]

Since the NAMII's establishment, some companies in the Tech Belt consortium reported *25% to 35% growth*, and attracted clients in the medical, aerospace, and electronics sectors.[9,10,11] The interagency Advanced Manufacturing National Program Office (AMNPO) will manage the NNMI and release an RFP in 2013, pending congressional approval.[12] What's more, the Department of Defense and Department of Energy will fund three IMIs, independent of congressional approval – the federal government will release topic areas in March, and solicit bids with contract awards in the fall.[13,14]

Californian Leadership:

Traditional manufacturing jobs are shifting towards automation and outsourcing to foreign countries.[15] However, the United States remains the largest manufacturer in the world because it sustains a competitive advantage due its technical infrastructure and intellectual capital.[16] Advanced manufacturing is an innovative and potentially profitable industry that could create *vast employment opportunities* for California and the United States.[17,18]

California is the largest manufacturing state with 1.2 million manufacturing jobs,[19] 47,000 manufacturing companies,[20] and $230 billion in manufacturing output that can lead the world in advanced manufacturing.[21] Moreover, advanced manufacturing is the *principle source of growth* for manufacturing in California – it added 15,400 jobs from 2010 to 2011 by manufacturers in the computer, electronics, metal, machinery, biotechnology, and aerospace sectors.[20]

The NNMI envisions that State and Local governments will participate IMI proposals and match federal funding.[22] As such, *GO-Biz is leading* the charge to establish an IMI in California by convening key stakeholders, which include the state's premier research universities, national laboratories, community colleges, workforce development organizations, iHub network small and medium enterprises, California Manufacturing Technology Consulting (CMTC), Corporation for Manufacturing Excellence (MANEX), California Network for Manufacturing Innovation (CNMI), California Manufacturers & Technology Association (CMTA), and industry partners.

Summit Agenda – Summary:

The agenda is structured around three key components **–** each "**component"** contains several corresponding "action plans" and "discussion items" listed below, in line with the President's strategy to capture our domestic competitive advantage in advanced manufacturing by "enabling innovation, securing the talent pipeline, and improving the business climate."[16]

Summit Themes to be addressed by Panels and Workgroups – Outline:

- **Enabling Innovation**
  - *Generate strategy for launching a statewide NNMI proposal.*
    - Clarify that the state will only support a single unified proposal with included interconnected projects for every IMI federal funding opportunity.
    - Encourage regional innovation clusters as the partnership model through the cooperative structure of the California Advanced Manufacturing Summit.
  - Strengthen partnerships with California iHub program.
    - Consider current iHubs as an avenue for advanced manufacturing.
    - Promote iHub RFP to solidify entrepreneurship, incubation, and commercialization for advanced manufacturing.
  - Isolate short- medium-, and long-term challenges/opportunities for advanced manufacturing growth.
    - Consult Industry partners: start-ups, large companies, and SMEs.
    - Examine knowledge producers: Research universities, national laboratories, and community colleges.

- **Securing the Talent Pipeline**
  - Pinpoint advanced manufacturing careers and education requirements.
    - Dispel employment and output myths about manufacturing.
    - Demarcate curriculum challenges for next generation of jobs.
  - Establish methods to enhance workforce training, university partnerships, and programs for returning veterans.
    - Categorize existing programs for advanced manufacturing demand.
    - Make recommendations to curtail programs for industry needs.
  - Address comprehensive immigration reform issues.
    - Discuss federal caps on high-skill worker and student visas.
    - Brainstorm creation of new visa categories for start-up entrepreneurs and science, technology, engineering, and mathematics (STEM) graduates.

- **Improving the Business Climate**
  - Discuss potential parameters of the advanced manufacturing industry.
    - Advance implementation of SB 1128 for the California Alternative Energy and Advanced Transportation Financing Authority.
  - Identify emerging sectors and clusters of advanced manufacturing.
    - Develop reports for innovation and growth in California.
  - Navigate federal, state, and local incentives for advanced manufacturing.
    - Federal: "Make it in America" grant, Manufacturing Extension Partnership, and tax credits.
    - State: SB 1128, iHub program, and tax credits.
    - Local: Investigate regional incentives throughout California.

Additional Facts Supporting Advanced Manufacturing in California:

- **Multiplier Effect on Economy**
  - 1 manufacturing job creates 2.5 jobs to support sectors.[23]
  - Every $1.00 spent in manufacturing, adds another $1.48 to the economy.[24]
  - Average manufacturing salary is $90,935 – 54% more than average of other sectors in California.[20]

- **Massive Californian Job Growth**
  - 281,461 manufacturing job listings in 16-month period – 67,246 in engineering and 30,402 in production (October 2011 – February 2012).[25]
  - One in four of the 1.14 million posted job listings were in manufacturing (2012).[25]
  - Manufacturing firms posted 66,043 job advertisements in four-month period – over one-third were advertised by computer, electronics, biotechnology, and aerospace companies (December 2012 – April 2012).[20]

- **Federal Funding Opportunities and State Incentives**
  - *National Network for Manufacturing Innovation* will provide $1 billion through the AMNPO to catalyze up to 15 IMIs. Announcement in early 2013.[4]
  - *Make It in America Challenge* will provide $40 million in competitive grant funding through multiple federal agencies. Announcement in early 2013.[26]
  - *The Advanced Energy Manufacturing Tax Credit* provides federal tax credits to clean energy projects with American-made parts and equipment. On February 7, 2013, the IRS announced the availability of additional 48C allocations, releasing $150 million remaining tax credits.[27]
  - *Senate Bill 1128*, effective January 1, 2013, provides a Sales and Use Tax Exclusion Program for advanced manufacturing projects.[28,29]
  - *California Research and Development Tax Credit* allows companies to receive a 15 percent tax credit and a 24 percent tax credit for basic research in the state.[30]

- **Manufacturing Labor Market Trends**
  - Traditional manufacturing industry clusters are experiencing consistent decline in California. [31]
  - Advanced manufacturing is steadily increasing, especially in 2011.[31]
  - Projections indicate advanced manufacturing will experience continued growth, while traditional manufacturing will continue to decline.[31]

    (Graphs demonstrating these trends are provided below.)

Exhibit 1: Historical Change in Employment (2006-2011)

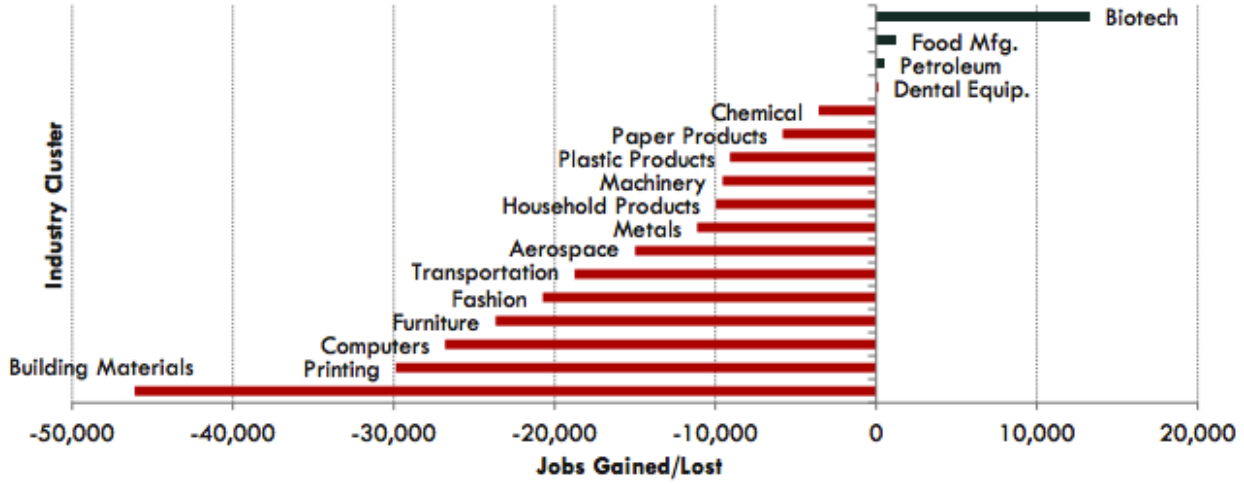


Exhibit 2: Recent Change in Employment (2010-2011)

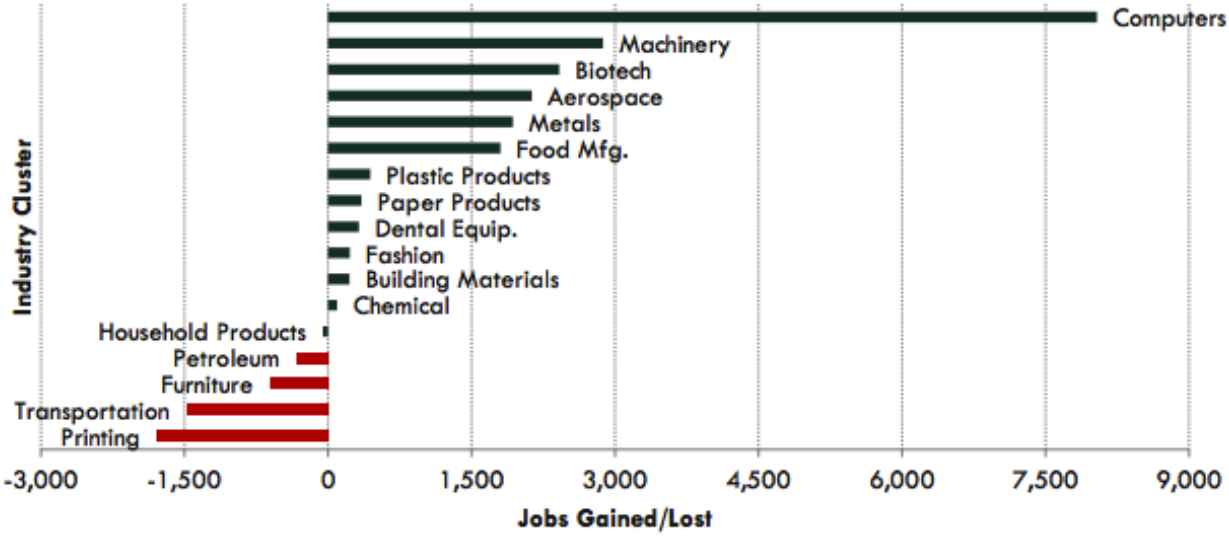
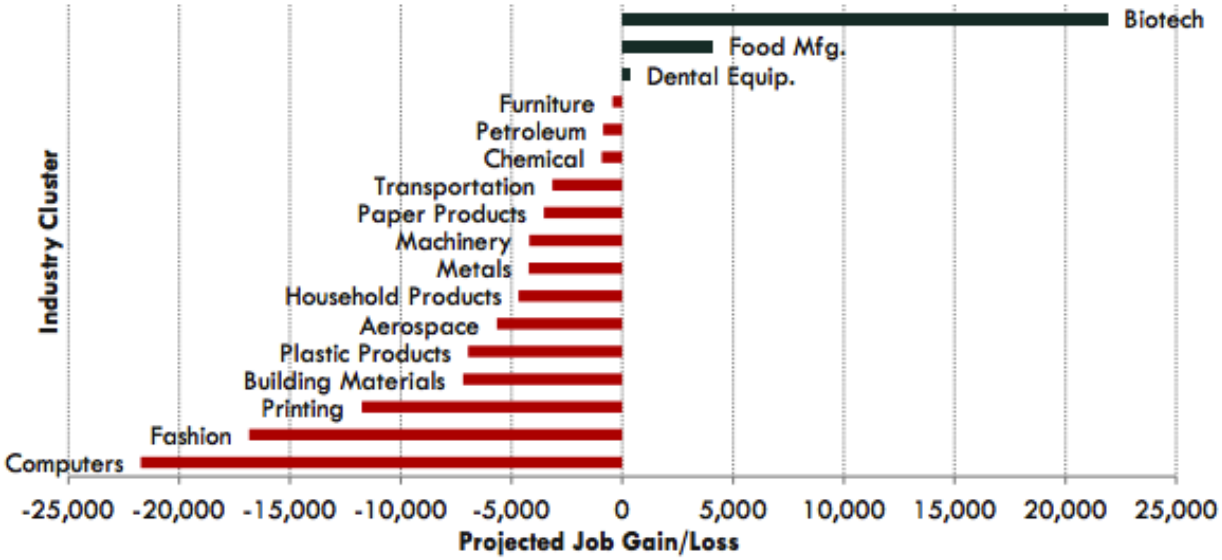
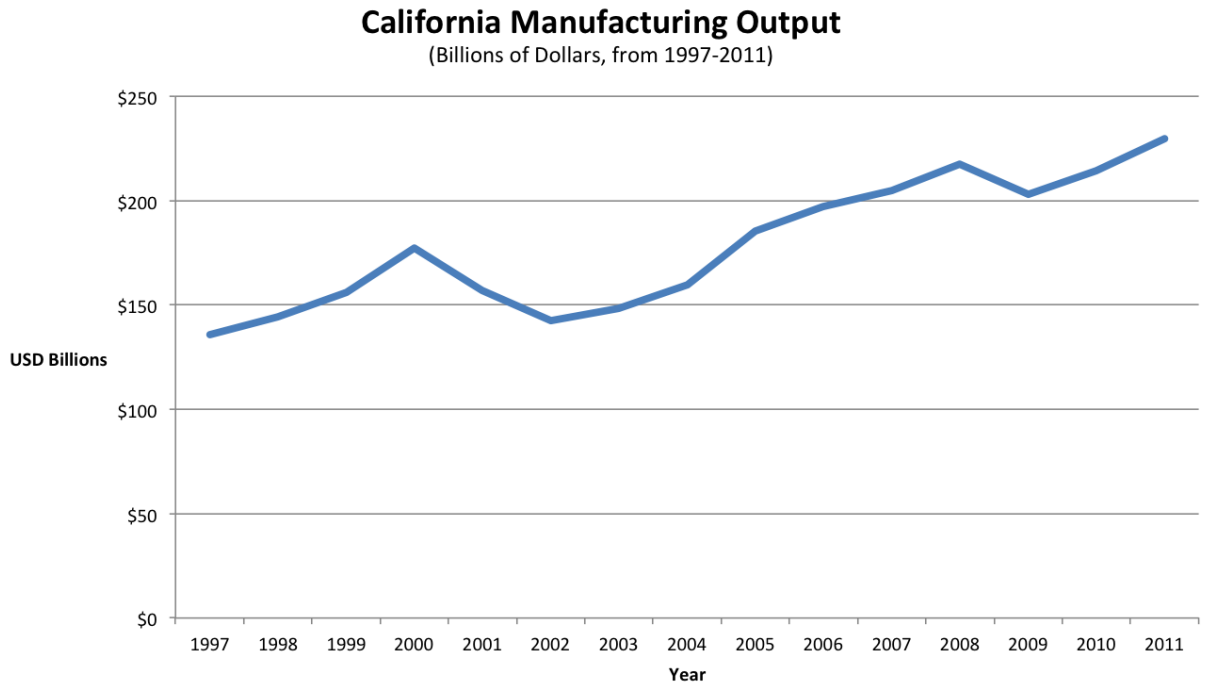


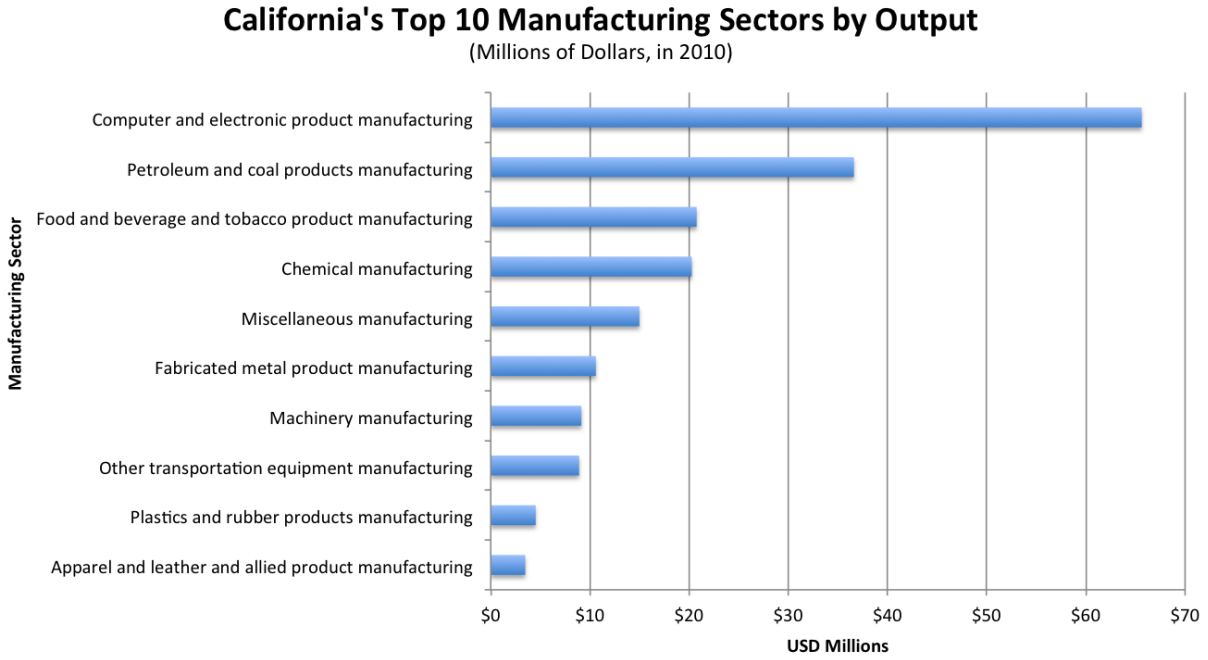
Exhibit 3: Projected Employment Growth (2011-2016)



- **Manufacturing Output Trends**
  - California's manufacturing industry has experienced consistent growth in output since 1997.[32]
  - The manufacturing output level for California is above pre-recession levels.[32]
  - Seven of the top ten manufacturing industry clusters by output in California use advanced manufacturing processes.[33]

    (Graphs demonstrating these trends are provided below.)





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